Reconsideration is respectfully requested of the rejection of claims 1 to 23 as unpatentable over Stites or Stites in combination with Arevato. The claims have been amended and are believed to be distinct and non-obvious from any of the references, alone or in combination, by virtue of "said system having a suppression filter effective at a frequency of the secondary radiations; said suppression filter including one of a low pass filter and a band pass filter" in claims 1 to 2, 4 to 9, 12 to 16, 22, and 23, and "said system having a suppression filter effective at a frequency of the secondary radiations; said suppression filter including a plurality of filter sections".

The claims dependent therefrom are believed to be more particularly distinct and non-obvious from any combination of references by virtue of particular features recited therein. With respect to claims depending from claim 1, these features are "said secondary radiations include harmonics of frequencies in the first band and the suppression filter is a harmonic suppression filter of said harmonics." in claim 2; "said suppression filter is a low pass filter" in claim 4; "said second band of frequencies includes the frequencies of one of GPS e.g. 1575.42 MHz, WSI e.g. 1544.5 MHz, XM Satellite and/or Sirius Satellite e.g. 2332.0-2345 MHz, Globalstar e.g. 2483.5 -2500 MHz and 1610.0-1626.5 MHz, Iriduim e.g. 1616-1626.5 MHz, Satcom e.g. 1530-1,559 and 1626.5-1,660.5 MHz." in claim 5; "system includes a capacitance compensating inductor at the input of the harmonic suppression filter" in claim 6; "the suppression filter is a band pass filter" in claim 7; "harmonic suppression filter includes discrete components" in claim 8; "said harmonic

suppression filter includes a distributed component filter" in claim 9; "said system includes a second electromagnetic radiator in the housing and tuned over the second band of frequencies" in claim 12; "said second radiator is a patch radiator and said first radiator is a cable radiator" in claim 13; "said second radiator is a patch radiator and said first radiator is a cable radiator, and said secondary radiations are harmonics of frequencies in the first band" in claim 14; "said second radiator is a patch radiator and said first radiator is a cable radiator, and said patch radiator operates at a band of frequencies that includes the frequencies of one of GPS e.g. 1575.42 MHz, WSI e.g. 1544.5 MHz, XM Satellite and/or Sirius Satellite e.g. 2332.0-2345 MHz, Globalstar e.g. 2483.5 -2500 MHz and 1610.0-1626.5 MHz, Iriduim e.g. 1616-1626.5 MHz, Satcom e.g. 1530-1,559 and 1626.5-1,660.5 MHz" in claim 15; "said housing has an elongated shape to project from the surface of an aircraft and surrounding the cable radiator and a has an inverted cup cover surrounding the patch radiator and the filter at the base of the elongated shape" in claim 16; "a base orienting said radiators into mutually limited coupled positions" in claim 22; and "said second radiator is a patch radiator and said first radiator is a cable radiator, and said secondary radiations are harmonics of frequencies in the first band; and said patch radiator has a rectangular shape and the filter is placed at the tip of the rectangular shape of the patch radiator" in claim 23.

With respect to claims depending from claim 25, these features are "said filter sections exhibits a characteristic center frequency within the second band of

frequencies, a first of said filter sections having an operating center frequency close to the characteristic center frequency of said filter sections, whereby simultaneous operation of the first filter section and the second filter section form the first band of frequencies having a wider band than said first filter section and said second filter section" in claim 3; "said suppression filter includes a circuit board with a plurality of connected conductive traces forming distributed quarter wave LC circuits and interconnecting conductive traces forming distributed quarter wave LC impedance inverters" in claim 10; "said suppression filter includes a circuit board with a three connected conductive traces forming three distributed quarter wave LC circuits and two interconnecting conductive traces forming two distributed quarter wave LC impedance inverters, so as to form a three pole arrangement" in claim 11; "said harmonic suppression filter is a notch filter" in claim 17; "said harmonic suppression filter is a microstrip notch filter" in claim 19; and "said harmonic suppression filter is a third order microstrip notch filter having sections with lengths one-quarter wavelengths of the frequencies to be suppressed" in claim 21.

None of the references, alone or in combination, suggests these features nor in any sense makes the claims obvious. The Stites patent fails to suggest system having a suppression filter effective at a frequency of the secondary radiation and including a low pass filter nor a plurality of filter sections in the suppression filter. The low pass filter makes it possible to suppress any harmonic interference such as 12th or 13th harmonics, generated by the transmitter in the transmitter/receiver TR1

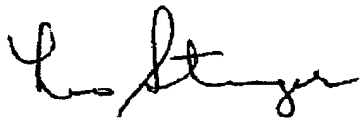
that may be coincident with the frequency band(s) of other antennas tuned to any of GPS (1,575.42 MHz), WSI (1,544.5 MHz), XM Satellite and/or Sirius Satellite (2,332.0-2,345 MHz), Globalstar (2,483.5 -2,500 MHz and 1,610.0-1,626.5 MHz), Iriduim (1,616-1,626.5 MHz), Satcom (1,530-1,559 and 1,626.5-1,660.5 MHz), etc. The resultant reduction in Radio Frequency Interference (RFI) from the monopole antenna allows for higher frequency antennas to be placed close to the monopole antenna without the risk of degrading their electrical performance. The Stites arrangement fails to consider the effects of several disturbances. The claimed arrangement permits suppression over a broad band, both with respect to a second resonator enclosed in the same antenna and with respect to other antennas. The multi filter section suppression filter has a similar effect in broadening the suppression band.

Arevato adds nothing to Stites to make the claimed structure obvious. As indicated by the Examiner, Arevato merely teaches in figures 2-4 attenuator [206]; and microstrip notch filter [214]. Arevator discloses a frequency converter that shifts an input frequency to a lower frequency. As indicated by Arevato, the attenuator 206 is used in order to reduce the power of any reflected signals before they enter back into the signal generator 104. The attenuator 206 reduces the power of the signal by 10 dB when the signal passes through it in the forward direction, and by an additional 10 dB when the reflected signal passes

through it coming back. The microstrip notch filter 214 merely replaces the notch filter 114 of FIG. 1. There is nothing to suggest the low pass filter nor the multiple suppression filter sections claimed nor their advantages either alone or combined to create a wider band.

In view of the above, it is respectfully requested that the claims be allowed and the case passed to issue.

Respectfully submitted,



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Claims showing amendments 27 July 2005

1. (Currently Amended) An aircraft antenna, comprising:

an aerodynamic housing structured for attachment to an outer surface of an aircraft;

a ~~first~~ system in the housing, said~~first~~ system having an electromagnetic radiator and being tuned over a first band of frequencies potentially to produce secondary radiations in at least a second band of frequencies;

said~~first~~ system having a suppression filter effective at ~~the frequencies~~a frequency of the secondary ~~radiations.~~radiations;

said suppression filter including one of a low pass filter and a band pass filter.

2. (Currently Amended) An aircraft antenna as in claim 1, wherein said secondary radiations ~~are~~include harmonics of frequencies in the first band and the suppression filter is a harmonic suppression filter of said harmonics.

3. (Currently Amended) An aircraft antenna as in claim ~~1,~~25, wherein said ~~electromagnetic radiator~~filter sections exhibits a characteristic center frequency ~~over a first defined bandpass, and said first system includes a matching network~~within the second band of frequencies, a first of said filter sections having an operating center frequency close to the characteristic center frequency ~~over a second defined bandpass,~~of said filter sections, whereby simultaneous operation of the ~~matching~~

~~network and the electromagnetic radiator~~first filter section and the second filter section form the first band of frequencies having a wider band than said first ~~defined band~~filter section and said second ~~defined band.~~filter section.

4. (Currently Amended) An aircraft antenna as in claim ~~3, wherein said characteristic center frequency and said characteristic center frequency are equal to each other.~~1, wherein said suppression filter is a low pass filter.

5. (Currently Amended) An aircraft antenna as in claim 2, wherein said ~~system includes a band- widening amplitude attenuator at said harmonic suppression filter for the first band of frequencies.~~

second band of frequencies includes the frequencies of one of GPS e.g. 1575.42 MHz, WSI e.g. 1544.5 MHz, XM Satellite and/or Sirius Satellite e.g. 2332.0-2345 MHz, Globalstar e.g. 2483.5 -2500 MHz and 1610.0-1626.5 MHz, Iriduim e.g. 1616-1626.5 MHz, Satcom e.g. 1530-1,559 and 1626.5-1,660.5 MHz.

6. (Currently Amended) An aircraft antenna as in claim 5, wherein a system includes a capacitance compensating inductor at the input of the harmonic suppression filter.

7. (Currently Amended) An aircraft antenna as in claim ~~3, wherein the matching network constitutes the internal inductance of electromagnetic radiator and a matching capacitor.~~2, wherein the suppression filter is a band pass filter.

8. (Currently Amended) An aircraft antenna as in claim 2, wherein harmonic suppression filter includes ~~a notch filter.~~discrete components.

9. (Currently Amended) An aircraft antenna as in claim 8, wherein said ~~notch~~harmonic suppression filter includes a distributed component~~notch~~ filter.

10. (Currently Amended) An aircraft antenna as in claim ~~9, said notch~~25, wherein said suppression filter includes a circuit board with a plurality of connected conductive traces forming distributed quarter wave LC circuits and interconnecting conductive traces forming distributed quarter wave LC impedance inverters.

11. (Currently Amended) An aircraft antenna as in claim ~~9, said notch~~10, said suppression filter includes a circuit board with a three connected conductive traces forming three distributed quarter wave LC circuits and two interconnecting conductive traces forming two distributed quarter wave LC impedance inverters, so as to form a three pole arrangement.

12. (Currently Amended) An aircraft antenna as in claim 1, wherein said system includes a second electromagnetic radiator in the housing and tuned over athe second band of frequencies

13. (Original) An aircraft antenna as in claim 12, wherein said second radiator is a patch radiator and said first radiator is a cable radiator.

14. (Original) An aircraft antenna as in claim 12, wherein said second radiator is a patch radiator and said first radiator is a cable radiator, and said secondary radiations are harmonics of frequencies in the first band.

15. (Currently Amended) An aircraft antenna as in claim 12, wherein said second radiator is a patch radiator and said first radiator is a cable radiator, and said ~~secondary radiations are harmonies~~patch radiator operates at a band of frequencies ~~in the first.~~
that includes the frequencies of one of GPS e.g. 1575.42 MHz, WSI e.g. 1544.5 MHz, XM Satellite and/or Sirius Satellite e.g. 2332.0-2345 MHz, Globalstar e.g. 2483.5 -2500 MHz and 1610.0-1626.5 MHz, Iriduim e.g. 1616-1626.5 MHz, Satcom e.g. 1530-1,559 and 1626.5-1,660.5 MHz.

16. (Original) An aircraft antenna as in claim 12, wherein said housing has an elongated shape to project from the surface of an aircraft and surrounding the cable

radiator and a has an inverted cup cover surrounding the patch radiator and the filter at the base of the elongated shape.

17. (Currently Amended) An aircraft antenna as in claim ~~15,~~25, wherein said harmonic suppression filter is a notch filter.

18. (Cancelled) An aircraft antenna as in claim 15, wherein said harmonic suppression filter is a band suppression filter.

19. (Currently Amended) An aircraft antenna as in claim ~~15,~~25, wherein said harmonic suppression filter is a microstrip notch filter.

20. (Currently Amended) An aircraft antenna as in claim ~~15,~~25, wherein said harmonic suppression filter is a microstrip notch filter having sections with lengths of one-quarter wavelength of the frequencies to be suppressed.

21. (Currently Amended) An aircraft antenna as in claim ~~15,~~25, wherein said harmonic suppression filter is a third order microstrip notch filter having sections with lengths one-quarter wavelengths of the frequencies to be suppressed.

22. (Currently Amended) An aircraft antenna as in claim 12, wherein said system includes a base orienting said radiators into mutually limited coupled positions.

23. (Currently Amended) An aircraft antenna as in claim 12, wherein said second radiator is a patch radiator and said first radiator is a cable radiator, and said secondary radiations are harmonics of frequencies in the first band; and

said patch radiator has a rectangular shape and the filter is placed at the tip of the rectangular shape of the patch radiator.

24. (Currently Amended) An aircraft antenna comprising:

an aerodynamic housing structured for attachment to an outer surface of an aircraft;

a first system in the housing, said first system having an electromagnetic radiator and being tuned over a first band of frequencies potentially to produce secondary radiations in at least a second band of frequencies;

said first system having a suppression filter effective at the frequencies of the secondary radiations;

~~as in claim 1, wherein said~~wherein a matching network includes a shorted quarter wave stub connected across the electromagnetic radiator so as to form a DC short circuit across the electromagnetic radiator, the quarter wave being defined as the center of the band of said electromagnetic radiator.

25. (New) An aircraft antenna, comprising:

an aerodynamic housing structured for attachment to an outer surface of an aircraft;

a system in the housing, said system having an electromagnetic radiator and being tuned over a first band of frequencies potentially to produce secondary radiations in at least a second band of frequencies;

said system having a suppression filter effective at the frequencies of the secondary radiations.

said suppression filter including a plurality of filter sections.